



# The first record of *Dictis* L. Koch, 1872 (Araneae, Scytodidae) in the Caucasus

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## Abstract

*Dictis* L. Koch, 1875, is recorded in the Caucasus for the first time. *Dictis strandi* (Spassky, 1941), **comb. nov.** is transferred to *Dictis* from *Scytodes* Latreille, 1804 based on the examined female and two males raised to maturity from the egg sac. Collecting data and digital photos of live and preserved specimens are provided, along with detailed descriptions of both sexes, diagnostic illustrations, and observations on the natural history of *Dictis strandi* **comb. nov.** The endogyne is depicted for the first time.

**Key words:** faunistics, Kakheti, new record, Scytodinae, spitting spiders, Vashlovani

## Introduction

Scytodidae Blackwall, 1864, is a relatively small family of araneomorph, haplogyne spiders, currently comprising over 250 extant species in four genera, most diversified in tropical and subtropical regions (WSC 2024), with several of them considered cosmopolitan and synanthropic species (Belosludtsev and Gasilin 2018; Rheims and Brescovit 2000).

The Scytodidae is represented in the Caucasus by a single widely distributed species (except for the mountain regions), *Scytodes thoracica* (Latreille, 1802) (Otto 2022; but see Lehtinen's comment in Marusik et al. 2004). The relative species richness from adjacent Turkey and Iran (WSC 2024) suggested that Scytodidae of the Caucasus were underexplored. This was partially confirmed during a recent expedition to Vashlovani National Park (hereafter Vashlovani NP), where six species of spiders from different families were discovered for the first time in the Caucasus, and two species were described as new to science (Seropian et al. 2024). This paper aims to present new taxonomical considerations, providing a new combination, and the first record of *Dictis strandi* **comb. nov.** from the Caucasus, based on a female with an egg sac collected during a trip to Vashlovani NP and two males reared in captivity from the same egg sac. Additionally, I provide observations on natural history, diagnostic illustrations (including the first drawings of the endogyne), and redescription of this poorly studied species, along with photos of the live female and preserved males and female.



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Materials and methods

The female of *Dictis strandi* comb. nov. was collected individually during an expedition to Vashlovani NP. Two adult males were obtained by raising specimens to maturity from an egg sac carried by the collected female. Successfully molted juveniles (two out of four hatched ones) were placed in separate 5 ml. vials and fed soft-bodied arthropods (Collembola, Thysanura, *Drosophila* spp.) and reached maturity two and a half months later. Sampling details are given below. The elevations and GPS coordinates (given in WGS84) were obtained via Garmin GPS MAP 64s. Studied specimens were then preserved in 96% ethanol and stored in a freezer at -22°C at the scientific collections of Ilia State University (Georgia, Tbilisi) (hereafter ISU). Specimens were examined with a Zeiss Stemi 508 Stereo Microscope with 8:1 Zoom and a Zeiss Apo 1.5x FWD 53 mm front lens attached. Drawings were made by the corresponding author based on microscope photographs using a Wacom CTH-690 Intuos Medium Pen and Touch Tablet with the programs Krita (version 2.9.7) and Photoshop CS6 (version 13.0). Drawings show the left male palp and the endogyne; perspective and scale bars are given in the plates and their captions. Epigyne and endogyne were prepared using a 30% potassium hydroxide (KOH) solution. Leg measurements are given as follows: Femur + Patella + Tibia + Metatarsus + Tarsus. All measurements are given in millimeters. A photo of the live female with an egg sac was taken with a Canon EOS 90D camera equipped with a Canon EF 60 mm f/2.8 Macro USM lens and a Canon Macro Twin Lite MT-26EX-RT; digital images of preserved males and female and male were taken with a Canon EOS 5D Mark II camera equipped with a Canon MP-E 65mm f/2.8 1-5x Macro Photo lens and a Canon Macro Twin Lite MT-26EX-RT. Digital images were then prepared using Zerene Stacker image stacking software and Adobe Photoshop CS6 (version 13.0). Terminology and the format of descriptions follow Zamani et al. (2022) and Fomichev and Omelko (2023).

Abbreviations

<b>ALE</b> – anterior lateral eye;	<b>RB</b> – receptacle base;
<b>F</b> – fovea;	<b>RH</b> – receptacle head;
<b>SaP</b> – subapical process;	<b>RS</b> – receptacle stem;
<b>PsA</b> – psemboic apex;	<b>Te</b> – tegulum;
<b>PLE</b> – posterior lateral eye;	<b>Fe</b> – femur;
<b>PME</b> – posterior median eye;	<b>Pa</b> – patella;
<b>AP</b> – anterior plate;	<b>Ti</b> – tibia;
<b>PP</b> – posterior plate;	<b>Mt</b> – metatarsus;
<b>PR</b> – positioning ridge;	<b>Ta</b> – tarsus.
<b>Ps</b> – psemboic;	

Results

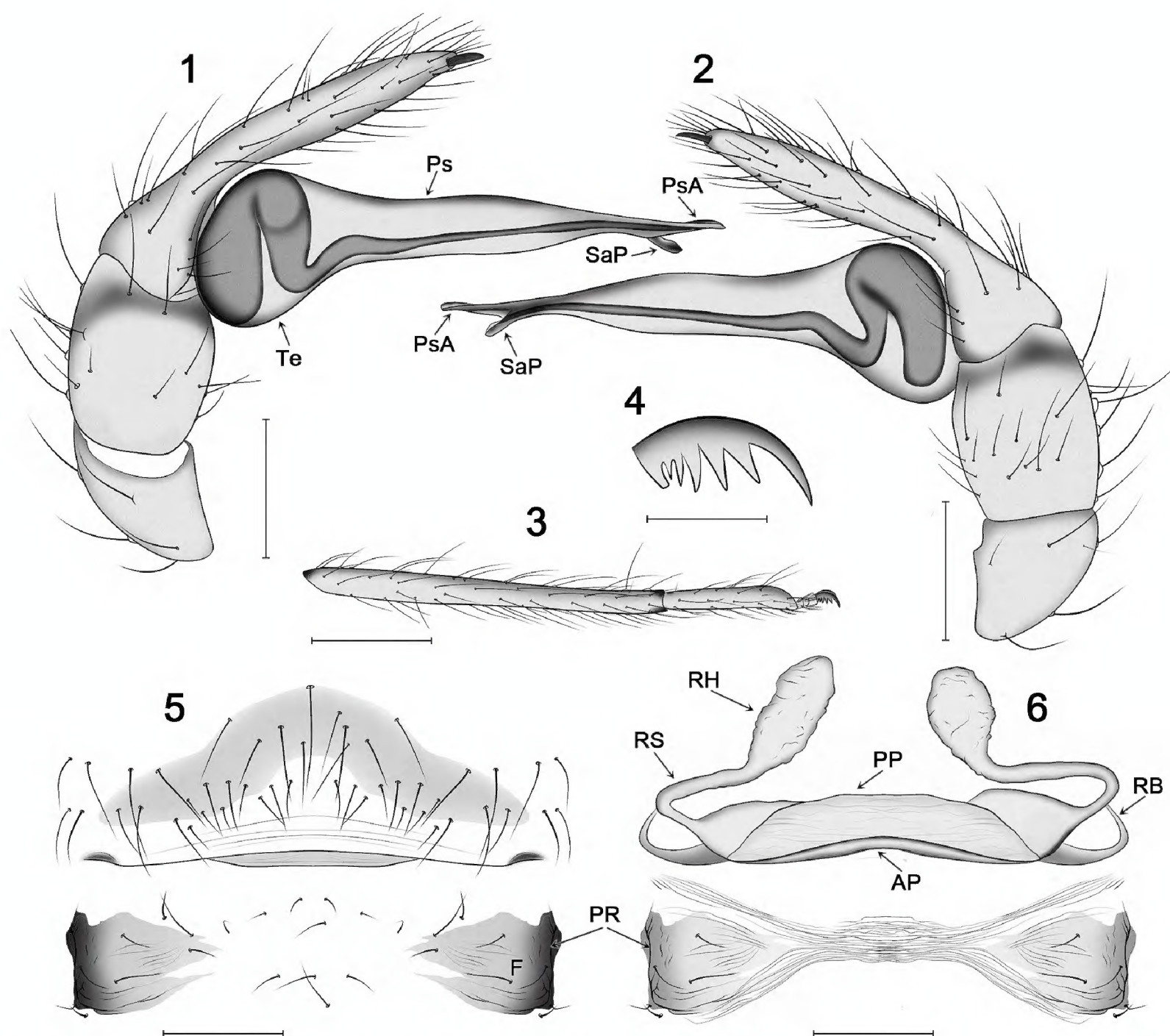
Family Scytodidae Blackwall, 1864

Genus *Dictis* L. Koch, 1872

Type species. *Dictis striatipes* L. Koch, 1872

Diagnosis. For diagnosis see Koch (1872) and Zamani et al. (2022).





**Figures 1–6.** *Dictis strandi* comb. nov. (1: male (CaBOL-ID 1038625), left palp, retrolateral view; 2: ditto, prolateral view; 3: Mt and Ta III; 4: leg III tarsal claw; 5: female, endogyne, ventral view; 6: endogyne, dorsal view). Scale bars: 0.25 mm (1–2, 4–6); 1 mm (3).

***Dictis strandi* comb. nov.**

Figs 1–10

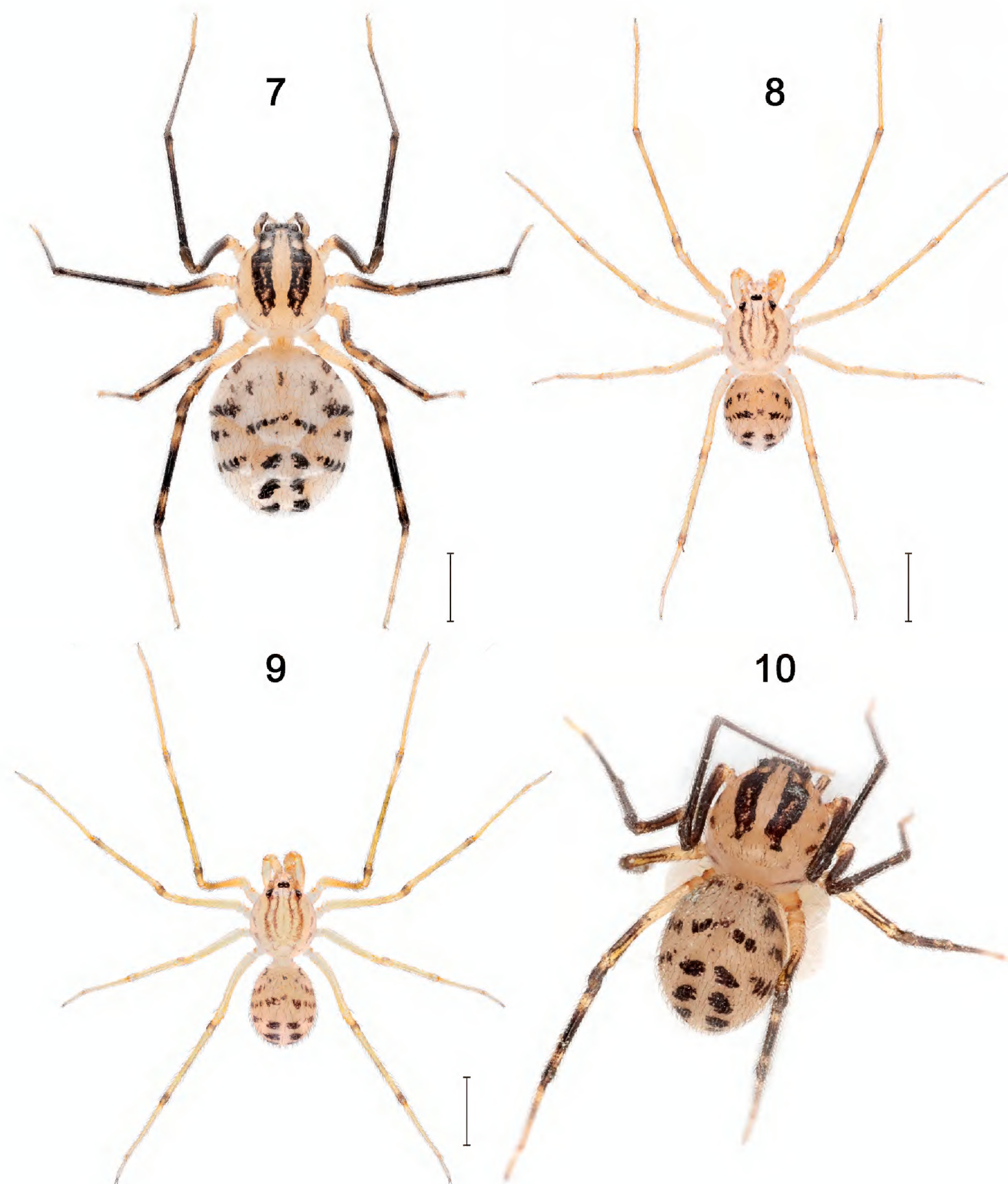
*Scytodes strandi* Spassky, 1941: 19, figs 7–9 (♂♀).

*Scytodes strandi*: Özkütük et al. 2013: 13, 3a–e (♂♀).

**Material examined.** GEORGIA – Kakheti • 1♀ (CaBOL-ID 1038624); Dedoplistskaro Mun., Vashlovani NP, Mijnskure; N41.1245°, E46.6456°; semidesert, under rocks; 22 May 2024; leg. Seropian A. • 2♂♂ (CaBOL-IDs 1038625, 103826); Same as previous; 13 Sep. 2024. Males were reared in captivity from egg-sac carried by the collected female. The material is stored at an ISU scientific facility.

**Diagnosis.** *Dictis strandi* comb. nov. resembles a polymorphic *D. striatipes* L. Koch, 1872 (Zamani et al. 2022: figs 11A–J; figs 12A–D), from which it can be distinguished by the following characteristics: Males of *D. strandi* **comb. nov.** differ by having a straight retrolateral subapical process (SaP) located at the base of the pseudoscapular apex (PsA), ca. 4.3 times shorter than the pseudoscapulus (PS), (Figs 1–2) [vs. prolateral pick (Zamani et al. 2022: fig. 11K)]; female of *D. strandi* comb. nov. differs by having an oval receptacle head (RH) and thinner receptacle stem (RS) [vs. rounded receptacle head and thicker receptacle stem





**Figures 7–10.** General habitus of *Dictis strandi* **comb. nov.** (7: male (CaBOL-ID 1038625); 8: male (CaBOL-ID 1038626); 9: female; 10: live female with an egg-sac). Scale bars: 2.5 mm.

(Zamani et al. 2022: figs. 12C–D)], and by postepigastric fovea (F) and positioning ridges (PR) separated from each other ca. three times their width [vs. four times in *D. striatipes* (Zamani et al. 2022: figs 12A–C)].

**Description.** Male (Figs 1–2, 8–9). Total length 4.73/4.75. Carapace 2.65/2.65 long, 2.31/2.31 wide. Sternum 1.51/1.51 long, 1.29/1.28 wide. Chelicerae length 0.72/0.72. Eye diameters: ALE 0.12/0.12, PME 0.13/0.13, PLE 0.12/0.12. Palp as shown in Figs 1–2: Ti ca. 1.1 times longer than wide, and ca. 1.3 times longer than Pa. Cymbium/bulb length ratio ca. 0.78. Tegulum (Te) subglobular, ca. 1.1 times wider than long. Psempolus/subapical process length ratio ca. 4.3.

**Coloration:** Carapace beige-light yellow, with ornament consisting of two broad longitudinal light-brown bands with light patches, running from clypeus to posterior part of carapace, and light-brown lateral bands broken into lines and



**Table 1.** Length of leg segments. Male (CaBOL-ID 1038625/10338626).

	Fe	Pa	Ti	Mt	Ta	Total
I	3.13/3.13	0.67/0.66	4.13/4.14	4.17/4.16	1.13/1.13	13.23/13.22
II	2.29/2.28	0.71/0.70	2.92/2.93	2.45/2.45	0.75/0.75	9.12/9.11
III	2.11/2.11	0.58/0.58	1.92/1.92	1.97/1.96	0.86/0.87	7.44/.744
IV	2.81/2.81	0.58/0.58	2.78/2.79	2.85/2.85	0.89/0.89	9.91/9.92

**Table 2.** Length of leg segments (Female).

	Fe	Pa	Ti	Mt	Ta	Total
I	2.78	0.94	4.47	4.31	0.87	13.37
II	2.59	0.94	4.02	3.92	0.77	12.24
III	2.22	0.86	3.45	3.55	0.68	10.76
IV	2.75	0.98	4.35	3.90	0.83	12.81

spots. Chelicerae beige, with two diagonally placed dark-brown patches each. Sternum, labium, and endites, light yellow. Palps yellow, with apically darkened Fe and Pa; legs light-yellow, with apically darkened Pa and Ti. Leg measurements as in Table 1. Abdomen dorsally beige-light yellow, posteriorly with three pairs of large dark spots forming longitudinal bands and smaller irregular dark spots forming median and anterior transverse bands running down towards the sides of abdomen. Venter uniformly light-beige.

Female (paratype) (Figs 5–7, 10). Significantly larger than males. Total length 9.87. Carapace 3.97 long, 3.47 wide. Sternum 2.23 long, 1.74 wide. Chelicerae length 1.06. Endogyne as shown in Figs 5–6: Post gastric fovea (F) triangle-like shaped, separated from each other ca. 3 times their width; receptacle head (RH) ovoid, ca. 2 times as long as wide, separated from each other ca. 1.4 times their width; RS/RH length ratio ca. 1.4.

Coloration as in males, with the carapace and abdomen having much darker dorsal ornaments (Figs 7, 10). Legs coloration: Fe I dark-brown, distally yellow-beige, Pa, Ti, and Mt I dark brown, Ta I beige; Fe II dark-brown with apically tapering beige dorsum, Pa II dark-brown with beige dorsum, Ti and MT-II dark-brown, Ta II beige; Fe III dark-brown with apically tapering beige dorsum, Pa II light-brown with beige dorsum, Ti III beige, with narrow dark-brown distal and apical annulations, and broad dark-brown median annulation, Mt III distally light-brown, apically beige, Ta III beige; Fe IV beige, with dark-brown lines and dots in apical half, Pa IV light-brown, with pair of dark-brown lateral lines in apical and distal halves, Ti IV beige, with narrow dark-brown distal and apical annulations, and broad dark-brown median annulation, Mt IV beige, distally dark-brown, Ta IV beige. Leg measurements as in Table 2. Eye diameters: ALE 0.14, PME 0.13, PLE 0.11.

**Habitat.** For habitat photos, see Seropian et al. (2024: figs. 51–52).

**Distribution.** Iran, Central Asia (except for Kazakhstan) (WSC 2024), Georgia (current paper). It is the westernmost record of the genus.

**Remarks.** The live female was placed in a 10 ml vial without substrate and found dead on 1 July. A carefully opened egg sac revealed four fully developed spiderlings, of which only two have molted successfully and were then placed in 5 ml vials without any substrate. Spiders were fed daily with soft-bodied arthropods (Collembola, Thysanura, *Drosophila* spp.) until they reached sexual maturity in the first decade of September. Adult males refused to eat. These observations suggest an annual life cycle.



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## Additional information

### Conflict of interest

The author has declared that no competing interests exist.

### Ethical statement

No ethical statement was reported.

### Funding

No funding was reported.

### Author contributions

Conceptualization, material collection, methodology, identification, writing, and figures preparation: AS.

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### Data availability

All of the data that support the findings of this study are available in the main text or Supplementary Information.

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